

CLAIMS

What is claimed is:

1. A method of provisioning a cable modem in a cable modem network
5 having a provisioning system and a headend, the method comprising:
transmitting a configuration file to a cable modem;
receiving, at a headend, a first data packet from a first cable modem,
the first data packet having a first service flow, the first data packet being
mapped to a first sub-interface;
10 receiving, at a headend, a second data packet from the first cable
modem, the second data packet having a second service flow, the second data
packet being mapped to a second sub-interface;
deriving the first service flow and the second service flow at the
headend; and
15 tagging the first data packet with a first MPLS tag and tagging the
second data packet with a second MPLS tag, wherein the headend is
unmodified.
2. A method as recited in claim 1 further comprising examining a
20 configuration file at the headend using a SID to determine a service flow.
3. A method as recited in claim 2 wherein the configuration file contains
a plurality of MPLS tags associated with a plurality of service flows.
- 25 4. A method as recited in claim 1 further comprising downloading
vendor-specific information and MPLS data to a configuration file before
transmitting the configuration file to the cable modem.
5. A method as recited in claim 1 further comprising modifying the
30 configuration file at the provisioning system.

6. A method of mapping an MPLS tag to a data packet in a CMTS comprising:

- receiving a data packet having a SID;
- 5 using the SID to obtain a service flow assigned to the data packet;
- determining an appropriate MPLS tag for the data packet based on the service flow; and
- tagging the data packet with the MPLS tag before transmitting the data packet to an external entity.

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7. A method of enabling a cable modem to service multiple quality of service levels for a data packet transmitted from one or more connected IP-addressable devices, the method comprising:

- receiving a configuration file upon powering up the cable modem, the configuration file containing one or more MPLS tags, an MPLS tag being associated with a service flow;
- 15 receiving a data packet from a connected IP-addressable device, the data packet having an IP address;
- examining the IP address of the data packet; and
- 20 determining a classifier based on the IP address by examining the configuration file.

8. A system for provisioning a cable modem in a cable modem network having a provisioning system and a headend, the system comprising:

- 25 means for transmitting a configuration file to a cable modem;
- means for receiving, at a headend, a first data packet from a first cable modem, the first data packet having a first service flow, the first data packet being mapped to a first sub-interface;
- means for receiving, at a headend, a second data packet from the first
- 30 cable modem, the second data packet having a second service flow, the second data packet being mapped to a second sub-interface;

means for deriving the first service flow and the second service flow at the headend; and

means for tagging the first data packet with a first MPLS tag and tagging the second data packet with a second MPLS tag, wherein the headend is unmodified.

9. A system for enabling a cable modem to service multiple quality of service levels for a data packet transmitted from one or more connected IP-addressable devices, the system comprising:

means for receiving a configuration file upon powering up the cable modem, the configuration file containing one or more MPLS tags, an MPLS tag being associated with a service flow;

means for receiving a data packet from a connected IP-addressable device, the data packet having an IP address;

means for examining the IP address of the data packet; and

means for determining a classifier based on the IP address by examining the configuration file.